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EXAMINER

VALENTI, ANDREA M

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MARVIN J. WILLIAMS, JR.

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Appeal 2009-003748  
Application 10/747,728  
Technology Center 3600

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Decided: September 23, 2009

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Before TONI R. SCHEINER, FRANCISCO C. PRATS, and  
JEFFREY N. FREDMAN, *Administrative Patent Judges*.

PRATS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to methods that include intercropping and mulching. The Examiner has rejected the claims for lack of enablement. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Claims 1-7 and 9-13 stand rejected and are on appeal (App. Br. 6).<sup>1</sup>  
Claims 8 and 14-20 are also pending, but are withdrawn from consideration as not directed to elected subject matter (Ans. 2).

Claim 1 is representative and reads as follows:

Claim 1. An improved intercropping and mulching method without artificial herbicides, fertilizer, pesticides and manure, said improved intercropping and mulching method comprising:

(1) no-till planting an annual green manure crop in the soil of a predetermined area;

(2) mowing said annual green manure crop the following spring, said annual green manure crop being combined with organic residue from said predetermined area to form combined green manure, said organic residue comprising desiccated intact soybean roots and desiccated intact nitrogen nodules, said combined green manure comprising a first portion of said combined green manure and a second portion of said combined green manure, said second portion of said combined green manure further blended with said soil of said predetermined area to a depth of approximately nine to fourteen inches, said first portion of said combined green manure becoming a combination mulch, said annual green manure crop remaining unmowed until tillage of said soil,

(3) intercropping at least two commercial crops within said soil blended with said second portion of said combined green manure,

(4) thereafter spraying said first portion of said combination mulch upon the surface of said soil of said predetermined area, said predetermined area now containing seeds of said at least two commercial crops,

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<sup>1</sup> Appeal Brief filed September 18, 2007.

whereby, said combined green manure provides nutrients to said at least two commercial crops and said combination mulch provides a ground cover and nutrients for said at least two commercial crops, said annual green manure crop and said organic residue protecting said soil of said predetermined area during the winter.

Claims 1-7 and 9-13 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to be supported by an enabling disclosure (Ans. 4).<sup>2</sup>

#### ENABLEMENT

##### *ISSUE*

The Examiner finds that, in independent claims 1 and 9, “the harvesting of the first portion of the annual green crop and its mixing to become a combined green manure is critical or essential to the practice of the invention, but [is] not included in the claim(s)” (Ans. 4). The Examiner further finds that the “method steps of forming the first and second portions of the combined green manure [are] critical or essential to the practice of the invention, but [are] not included in the claim(s)” (*id.*). Therefore, the Examiner concludes, the claims are “not enabled by the disclosure” (*id.* (citing *In re Mayhew*, 527 F.2d 1229 (CCPA 1976))).

The Examiner elaborates:

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<sup>2</sup> Page 4 of the Answer and page 2 of the Final Rejection list claims 1-20 as being subject to this ground of rejection. However, the Examiner’s Answer also states that claim 8 and 14-20 are withdrawn from consideration as being directed to nonelected subject matter.

Appellant “confirms that Claims 8 and 14 were originally withdrawn without traverse in the proceedings below” (App. Br. 14). Because Appellant lists only claims 1-7 and 9-13 as being appealed, our review of the rejection is limited to those claims.

Paragraph (78) of applicant's specification indicates that the first portion of combined green manure is created by cutting the top half of the annual green manure crop and mixing it with organic debris. Then the second portion is created by tilling the bottom half of the annual green manure crop with soil and organic debris. This is very different then [sic] what is claimed in independent Claims 1 and 9. The method steps outline[d] in paragraph (78) are essential elements that are omitted from the claims.

(Ans. 5.)

The Examiner further explains:

[C]laim[s] 1 and 9 present a very broad method that could be interpreted to mean that the annual green manure crop is mowed down completely in one step and all of it is combined with organic debris to create a combined green manure. Once combined the combined green manure is broken into a first portion and a second portion. This is not disclosed in the specification. Therefore, applicant's claims cover a method not enabled by the specification.

(*Id.* at 5-6.)

The Examiner also notes that the independent claims recite "'spraying said first portion of said combination mulch' but there is no step between mowing the annual green manure and harvesting and combining the . . . first portion to arrive at the combination mulch so it can be sprayed" (*id.* at 4).

Appellant contends that the Examiner failed to meet the required burden of establishing that the claims are not enabled (*see* App. Br. 15-16). Among other portions, Appellant points to paragraph 79 of the Specification and Figure 4 as explaining the procedure for mowing the green manure crop (*id.* at 16), and argues that an ordinary artisan would have been able to

practice the claimed process in view of these disclosures without undue experimentation (*see id.* at 20).

In view of the positions advanced by Appellant and the Examiner, the issue is whether Appellant has shown that the Examiner failed to make a *prima facie* case that the claims omit an element critical to the invention, and that an ordinary artisan would therefore have been unable to practice the claimed processes without undue experimentation.

*FINDINGS OF FACT (“FF”)*

1. Claim 1 recites an intercropping and mulching method that does not use artificial herbicides, fertilizer, pesticides or manure. An annual green manure crop is first planted by a no-till method in a predetermined area. The following spring the annual green manure crop is mowed.

The annual green manure crop is then combined with organic residue from the predetermined area to form “combined green manure.” The organic residue must include desiccated intact soybean roots and desiccated intact nitrogen nodules.

The “combined green manure” is composed of two portions, a first portion which “becom[es]” a combination mulch, and a second portion which is further blended with the soil of the predetermined area to a depth of approximately nine to fourteen inches. The annual green manure crop must remain unmowed until tillage of the soil.

After formation of the two combined green manure portions, at least two commercial crops are intercropped in the soil blended with the second portion of the combined green manure.

After planting, the first portion of the combination mulch is sprayed onto the surface of the soil of the predetermined area, the predetermined area

now containing seeds of the at least two commercial crops. The combined green manure provides nutrients to the commercial crops and the combination mulch provides a ground cover and nutrients for the crops. The annual green manure crop and the organic residue protect the soil of the predetermined area during the winter.

2. Independent claim 9 recites a similar process, with additional limitations naming specific crop plants, soybeans and corn, and also naming buckwheat or buckwheat and wheat, Austrian peas, hairy vetch, soybeans, annual rye grass and winter rye, as the green manure plants.
3. Paragraph 65 of the Specification provides an overview of Appellant's process:

My intercropping and mulching method 110 resolves the long-felt need to intercrop economically while preserving the soil for the long term. The following steps comprise[] . . . the best mode of my process 110 in most basic format, and without additional artificial pesticides, fertilizers and herbicides:

- (i) no-till planting of green manure plants 44a during the fall within soil 45 of a predetermined area which contains organic debris 19,
- (ii) harvesting a portion of the green manure plants 44a for mulch 20;
- (iii) quick tilling a portion of green manure plants 44a and organic debris 19 into the soil 45 of this predetermined area the following spring, and
- (iii) [sic] intercropping of commercial crops, including at least one legume, immediately thereafter within the same predetermined soil, and
- (iv) spreading a layer of combination mulch 20, also comprising green manure plants 44a and organic debris 19, over the surface of the intercropped seeded soil 45.

(Spec. ¶ 65 (as amended July 18, 2005).)

4. Appellant's Figure 3 is reproduced below:

FIG. 3

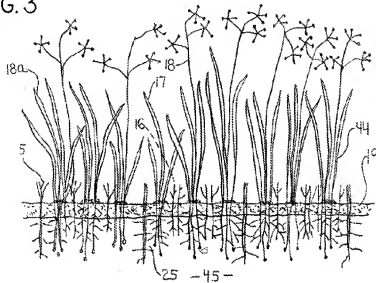


Figure 3 shows “a lateral view of a field in early spring just prior to mowing of green manure plants, corn stalks and soybean stubble” (Spec. ¶ 43).

5. Paragraph 78 of the Specification states:

Referring to Figure 3, the upper portions of young wheat [[17]] and/or buckwheat [[18]] plants 18a remain viable until it is mowed immediately prior to spring tilling. The top approximate one-half of the upper portions of young wheat and/or buckwheat plants 18a is chopped and blended with organic debris 19 to become combined mulch 20, as explained in more detail *infra*. The remaining approximately one-half of the bottom portions of green manure plants 44 (such as upper portions of young wheat and/or buckwheat plants 18a), is tilled into soil 45 with organic debris 19 prior to spring seeding of intercropped commercial plants.

(Spec. ¶ 78 (as amended March 27, 2006).)



6. Appellant's Figure 4 is reproduced below:

FIG.4

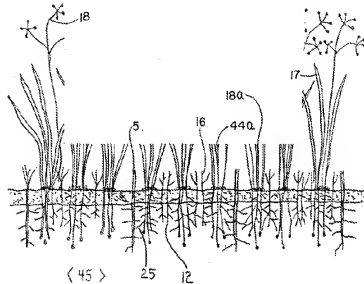


Figure 4 shows “a lateral view of mowed wheat grass and resulting in a twenty foot path prior to tillage, and with adjacent unmowed wheat grass” (Spec. ¶ 44).

7. Paragraph 79 of the Specification states:

Referring to Figure 4, in the preferred embodiment and best mode the farmer mows upper portions of young wheat and/or buckwheat plants 18a, residual corn stalks 5 and organic debris 19 approximately three inches to ten inches above soil 45. The determination of the exact height of mowed upper portions of young wheat and/or buckwheat plants 18a to properly cover soil 45 is empirical. This determination also depends upon leaf density of upper portions of young wheat and/or buckwheat plants 18a. Leaf density primarily depends upon nutrients in the soil, weather conditions, and time of the year, including the required 60 degrees Fahrenheit (F.) soil temperature. Consequently, each field has a different leaf density and different plant heights.

(Spec. ¶ 79 (as amended March 27, 2006).)

*PRINCIPLES OF LAW*

The Examiner bears the burden of establishing that practicing the full scope of the claimed subject matter would have required undue experimentation. *In re Wright*, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993) (“[T]he PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application.”).

“The scope of enablement . . . is that which is disclosed in the specification plus the scope of what would be known to one of ordinary skill in the art without undue experimentation.” *National Recovery Technols. Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed Cir. 1999).

Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. . . . The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed.

*In re Wands*, 858 F.2d 731, 736-37 (Fed. Cir. 1988) (citations omitted).

Thus, while the Specification must enable the skilled artisan to practice the full scope of the claimed subject matter, “[i]t is well settled that patent applicants are not required to disclose every species encompassed by their claims, even in an unpredictable art.” *In re Vaeck*, 947 F.2d 488, 496 (Fed. Cir. 1991).

A claim is not enabled, however, if it omits an element disclosed in the Specification as being critical to practicing the invention. *See In re Mayhew*, 527 F.2d 1229, 1233 (CCPA 1976):

Although appellant now strenuously argues that the cooling bath is optional, his specification not only fails to support this contention, but leads us, as it did the examiner and board, to believe that both it and its location are essential. We therefore conclude that claims which fail to recite the use of a cooling zone, specially located, are not supported by an enabling disclosure.

*Id.*

“In determining whether an unclaimed feature is critical, the entire disclosure must be considered. Broad language in the disclosure (including the abstract) omitting an allegedly critical feature tends to rebut the argument of criticality. . . . Also, features that are merely preferred are not critical.” *In re Goffe*, 542 F.2d 564, 567 (CCPA 1976) (citations omitted).

Moreover, with respect to claim interpretation, the Examiner must “determine[] the scope of claims in patent applications *not solely on the basis of the claim language*, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (emphasis added) (quoting *In re American Academy Of Science Tech Center*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Accordingly, “[c]laims are not to be read in a vacuum[;] while it is true they are to be given the broadest reasonable interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part.” *In re Royka*, 490 F.2d 981, 984 (CCPA 1974).

*ANALYSIS*

We agree with Appellant that the Examiner failed to make a prima facie case of lack of enablement. Specifically, we agree that the claims do not omit an element critical to the invention. We also agree that the Examiner has not shown that an ordinary artisan would have been unable to practice the claimed processes without undue experimentation.

As the Examiner points out, paragraph 78 of the Specification states that the “top approximate one-half of the upper portions of young wheat and/or buckwheat plants 18a is chopped and blended with organic debris 19 to become combined mulch 20,” and also states that the “remaining approximately one-half of the bottom portions of green manure plants 44 (such as upper portions of young wheat and/or buckwheat plants 18a), is tilled into soil 45 with organic debris 19 prior to spring seeding” (FF 5).

Paragraph 65, however, provides a more general disclosure of the basic process steps of the invention, which includes “(ii) harvesting a portion of the green manure plants 44a for mulch 20” and “(iii) quick tilling a portion of green manure plants 44a and organic debris 19 into the soil 45 of this predetermined area the following spring” (FF 3). Given the broader disclosure in paragraph 65, the Examiner’s argument does not persuade us that the features recited in paragraph 78 are critical to the invention.

We also do not agree that independent claims 1 and 9 omit any critical features of the process described in the Specification. Specifically, claims 1 and 9 both recite that, once mowed, the “annual green manure crop [is] combined with organic residue from said predetermined area to form combined green manure” (App. Br. A-1, A-3). Both claims then recite that

the “combined green manure compris[es] a first portion . . . and a second portion.” (*Id.*)

The claims go on to recite that “said second portion of said combined green manure [is] further blended with said soil of said predetermined area to a depth of approximately nine to fourteen inches, said first portion of said combined green manure becoming a combination mulch” (*id.*).

Thus, after the mowing step, the claims recite the step of combining the green manure crop with the organic residue from the soil to produce combined green manure. One portion of the combined green manure, which as disclosed in paragraph 78 can be the unmowed portion remaining in the ground (*see* FF 4, 5), is blended into the soil along with organic debris, and the other portion “becom[es] a combination mulch” (*see id.*).

While it is true that the use of the passive phraseology “becoming a combination mulch” might not recite a specific collecting step, claims 1 and 9 both recite a subsequent step of “spraying said first portion of said combination mulch upon the surface of said soil of said predetermined area” (App. Br. A-2, A-4).

Therefore, although the claims might not be phrased in precisely the manner the Examiner desires, we do not agree with the Examiner that the claims fail to recite a process having the steps described in the Specification. Moreover, to the extent the Examiner argues that paragraph 78 requires a specific portion, i.e., approximately one-half, of the green manure product to be mowed (*see* FF 4), paragraph 79 discloses that the mowing height can be adjusted by the practitioner, depending on leaf density (FF 6). Thus, we are not persuaded that an ordinary artisan viewing the Specification would have

had to resort to undue experimentation to determine the suitable mowing height.

We acknowledge the Examiner's assertion, and diagrammatic presentation in support thereof, that the claims encompass a process that is different than that disclosed in the Specification (*see* Ans. 8). However, "[i]t is well settled that patent applicants are not required to disclose every species encompassed by their claims, even in an unpredictable art." *In re Vaeck*, 947 F.2d at 496. It is also well settled that claims are "[c]laims are not to be read in a vacuum[;] while it is true they are to be given the broadest reasonable interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part." *In re Royka*, 490 F.2d at 984.

Thus, the fact that the claims might recite a process broader than the preferred embodiments disclosed in the Specification does not necessitate a conclusion of non-enablement. Moreover, because the Examiner has not shown that the claims, when viewed in light of the Specification, recite a process that an ordinary artisan could only practice with undue experimentation, we agree with Appellant that the Examiner has failed to make a *prima facie* case of lack of enablement.

In sum, for the reasons discussed above, we agree with Appellant that the Examiner erred in finding that the claims fail to recite a limitation critical to the invention. Because the Examiner has not otherwise shown that an ordinary artisan viewing Appellant's disclosure would have had to resort to undue experimentation to practice the claimed invention, we reverse the Examiner's rejection for lack of enablement.

Appeal 2009-003748  
Application 10/747,728

REVERSED

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